

## REMARKS

Reconsideration is requested.

Claims 3-13, 15, 16, 19, 20 and 22 have been canceled, without prejudice. Claims 24-30 have been added. Claims 1, 2, 14, 17, 18, 21 and 23-30 are pending. Support for the added claims may be found through the specification and originally-filed claims. No new matter has been added.

Return of an initialed copy of the PTO-1449 Form filed with the Information Disclosure Statement filed June 20, 2002, is requested.

The applicants note that the biological material described in the present application as UO95 is now referred to by the assignees as TN7765 in the public domain. The "py" designation referred to in the present application is now referred to as "LP or "low phytic acid" or "low phytate" or "high bioavailable phosphorous."

The specification has been amended to include the Abstract which is the same as the Abstract published with the application under No. WO 99/02668.

The specification has been amended to include the accession number of the deposited material, as indicated in the "INDICATIONS RELATING TO A DEPOSITED MICRO-ORGANISM" form PCT/RO/134 received from the International Bureau. A further copy of the ATCC International Form relating to the deposit is attached for the Examiner's convenience and consideration.

The specification is submitted to be complete and the Table spanning 37-38 which is specifically referred to by the Examiner is not believed to require further amendment. More specifically, the amounts of protein and oil indicated in the Table will be

understood to refer to weight percent protein and oil, as recognized by one of ordinary skill in the art and referred to, for example, throughout the specification and claims (see, page 16, lines 24-27). The specification is submitted to be complete and further amendments are not believed to be required however the Examiner is requested to contact the undersigned if otherwise.

The Rule 75 objection to claim 23 is obviated by the above. Withdrawal of the objection is requested.

The Section 112, first paragraph, rejection of claims 1, 2, 14, 17, 18 and 21-23 is traversed. Reconsideration and withdrawal of the rejection are requested as the applicants submit access to the deposited materials should not be required to make and use the presently claimed invention. Specifically, the applicants have adequately described an embodiment of the claimed invention wherein mutagenesis is used along with selection of an example of the presently claimed material. The mutagenesis process used in the exemplified embodiment is well-known to those of ordinary skill in the art and alternative examples of similar mutagenesis methods, such as are described beginning on page 18, line 20 of the present specification, are well-known. Moreover, methods of testing mutagenized material for the characteristics recited in the claims are well-known and exemplified in the present specification. Accordingly, the applicants described, without need for access to the deposit of material, the presently claimed invention such that one of ordinary skill in the art is taught how to make and use the presently claimed invention. The claims are submitted to be supported by an enabling

disclosure and withdrawal of the Section 112, first paragraph, rejection of claims 1, 2, 14, 17, 18, 21 and 23 is requested.

The Section 112, first paragraph, "written description", rejection of claims 1, 2, 14, 17, 18, 20, 21 and 23 is traversed. Reconsideration and withdrawal of the rejection are requested as the applicants believe methods of mutagenesis are well-known in the art and a variety of methods are available to one of ordinary skill in the art. The Examiner's attempt to require the applicants to recite the mutagenesis method exemplified in the specification is inappropriate. The applicants submit that a disclosure which contains a teaching of the manner and process of making and using the invention in terms which correspond in the scope to those used in describing and defining the subject matter sought to be patented must be taken as being in compliance with the enablement and written description requirements of the first paragraph of Section 112 unless there is a reason to doubt the objective truth of the statements contained therein which must be relied on for enabling support. See, in re Brana, 34 USPQ 2nd 1436, 1441 (Fed. Cir. 1995). As the Examiner has failed to indicate why one of ordinary skill in the art would have a reason to doubt the objected truth of the present specification, the applicants believe the specification must be taken as an adequate description of how to make and use the presently claimed invention.

The Examiner's comments with regard to the disclosure and the alleged lack of "any examples of non-lethal mutant cereal seed having at least 5% by weight oil, at least 11% by weight protein and at least a one-third reduction in phytic acid" is not understood. See, page 5 of the Office Action dated February 7, 2002 (Paper No. 9). The

applicants note the exemplified mutant UO95py contains, as described on page 38 of the specification, 14.4 weight percent protein (i.e., at least 11% by weight protein), 5.3 weight percent oil (i.e., at least 5% by weight oil), and 85.3% phytate reduction (i.e., at least a one-third reduction in phytic acid. Clarifications of the Examiner's assertions is requested in the event the rejection is maintained.

The Examiner's comments with regard to the alleged unpredictability of altering the phenotype of seed by known mutagenesis techniques (see, page 6 of Paper 9) is noted. The Examiner is urged to appreciate that phenotypes, such as are claimed, are produced by mutagenesis as a part of a population which, following the teachings of the present specification, may be selected for their advantageous properties. Given the present specification, such a selection would not require undue experimentation and the Examiner is urged to appreciate that absolute predictability is not required. The Examiner is also urged to appreciate that working examples are provided to exemplify the claimed invention and are also not required. Withdrawal of the Section 112, first paragraph, rejection of the claims is requested.

The claims have been amended to obviate the Section 112, second paragraph, rejection of claims 2, 14, 17, 18, 21 and 23. Withdrawal of the Section 112, second paragraph, rejection is requested.

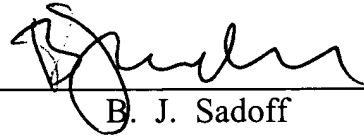
In view of the above, the claims are submitted to be in a condition for allowance and a Notice to that effect is requested.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE SPECIFICATION**

Amend the specification as follows.

Delete the paragraph spanning lines 6-28 of page 8 and insert the following therefor:

--In another embodiment, the present invention provides an increase in phosphorus availability of from 28% for yellow dent corn to greater than about 70%, preferably less than about 90%, alternatively about 80% to about 84-85%. Availability being the amount of utilizable phosphorus compared to total phosphorous from feed. The hybrid grain of the present invention is preferably a cross between useful inbreds and an inbred line ExSeed line U095 -lpa1-E (alternatively referred to as U095-E or U095py; deposited as strain designation EX1965py on July 7, 1998 with American Type Culture Collection, 10801 University Blvd., Manassas, VA 20110-2209 USA, under conditions of the Budapest Treaty, Accession No. [ ] 203034. Source U095-py 1656-W97 - Florida - 100) The "E" or "py" designation used herein indicates the introduction of a lpa1 mutation by the present inventors. A number of other crosses and inbreds can be employed. For example, the following female inbreds BD68py, TR306py, WD22py and TR329py were crossed with male inbreds U095py, UU01py, UE95py, TR335py and TR386py to make high-yielding hybrid combinations. Crosses with U095py are particularly preferred and the inbred U095py and hybrids made therefrom are specific embodiments of the present invention. The hybrid grain of the present invention

characterized by having ~6% oil and 12% protein (or 3% more oil and 3% more protein than yellow dent corn) and at least about 33% reduction in phytic acid content.--

### IN THE CLAIMS

2. (Amended) [A]The seed according to claim 1 having at least 5% oil and at least 13% protein and said reduction in the amount of phytic acid is at least half relative to wild-type seed of said species.

14. (Amended) [A]The seed according to claim 1 selected from the group consisting of maize seed, rice seed[,soy seed] and barley seed.

17. (Amended) A plant produced from [a]the seed according to claim 1.

18. (Amended) [A]The seed according to claim 1 wherein said seed is fully mature.

21. (Amended) A non-lethal, mutant seed [according to claim 1] of a cereal plant species having at least 6% by weight oil and at least 9% by weight protein and [said reduction in the amount of phytic acid is] at least [half] one-third reduction in phytic acid amount relative to wild-type seed of said species.

23. (Amended) A non-lethal, mutant seed [according to claim 1] of a cereal plant species having at least 6% by weight oil and at least 9% by weight protein and [said reduction in the amount of phytic acid is] at least [half] one-third reduction in phytic acid amount relative to wild-type seed of said species.